

555 Eleventh Street, N.W., Suite 1000  
Washington, D.C. 20004-1304  
Tel (202) 637-2200 Fax (202) 637-2201  
www.lw.com

FIRM / AFFILIATE OFFICES

Boston	New Jersey
Brussels	New York
Chicago	Northern Virginia
Frankfurt	Orange County
Hamburg	Paris
Hong Kong	San Diego
London	San Francisco
Los Angeles	Silicon Valley
Milan	Singapore
Moscow	Tokyo
	Washington, D.C.

LATHAM & WATKINS LLP

ORIGINAL

April 15, 2004

Ms. Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12th Street, S.W.  
Washington, DC 20554

RECEIVED

APR 15 2004

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

Re: Notice of Ex Parte Presentation  
In the Matter of Orbital Debris, IB Docket No. 02-54

EX PARTE OR LATE FILED

Dear Ms. Dortch:

Yesterday, April 14, 2004, Alan Auckenthaler, General Counsel of Inmarsat Ventures Ltd, and the undersigned, met with Commissioner Abernathy and Jennifer Manner.

The topics discussed by Inmarsat were those described in the enclosed presentation, as well as Inmarsat's position of record in this proceeding.

An original and one copy are enclosed.

Respectfully submitted,

  
John P. Janka

Enclosures

cc: Commissioner Kathleen Q. Abernathy  
Ms. Jennifer A. Manner

No. of Copies rec'd 1  
List ABCDE

RECEIVED

APR 15 2004

EX PARTE OR LATE FILED April 14, 2004

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

**Inmarsat Ventures Ltd**

**Orbital Debris Proceeding--IB Docket No. 02-54**

**Main Issue---MSS Stationkeeping Tolerance**

**A. 25.210(j) currently specifies station-keeping requirements for Fixed Service Satellites (FSS) in the geostationary satellite orbit**

**1. NPRM proposes one change and asks a question about this rule**

**a) NPRM proposal: shorten and simplify rule as it applies to FSS to require +/- 0.05 E/W tolerance, "unless otherwise authorized by the Commission."**

**(1) Inmarsat has no objection to this rule as it applies to FSS spacecraft**

**b) NPRM question: should this rule be extended to MSS spacecraft?**

**(1) *No extension of FSS stationkeeping rule to MSS is appropriate or warranted***

**(a) Such a constraint does not adequately account for the essential characteristics of GSO MSS networks**

**i) GSO MSS spacecraft orbit in an inclined "figure eight" that extends above and below the equatorial plane to:**

- a. take advantage of mobile earth terminal antenna technology**
- b. support larger communications payloads, conserve fuel, extend life**

**ii) This "figure eight" orbit typically exceeds the proposed +/- 0.05 E/W tolerance**

- a. But it complies with the ITU standard of +/- 0.10 E/W**
- b. GSO MSS spacecraft are typically designed based on the ITU standard**

**(b) No substantiated reason in the record to impose this new constraint on GSO MSS**

**i) neither collision risk nor interference problems have been demonstrated**

**(2) *If +/- 0.05 E/W tolerance nonetheless is extended to MSS, rule should be modified to constrain E/W tolerance only at the equatorial plane***

**(a) Otherwise, the rule would also unnecessarily constrain the "height" of a GSO MSS figure eight orbit**

- i) "Width" of the figure eight orbit is the square of its height
  - ii) Thus, the current rule would unduly constrain "normal" MSS orbit above and below the equatorial plane
    - a. Most of the time, MSS spacecraft orbit above and below the equatorial plane where FSS spacecraft are typically located
  - (b) *This change still would impose additional stationkeeping maneuver requirements (and expenditures of fuel) on MSS operators so they could comply with +/- 0.05 E/W at the equator*
- (3) *If any +/-0.05 E/W tolerance is imposed on MSS, all MSS spacecraft in orbit or under construction should be "grandfathered"***
- (a) Their propulsion systems and fuel budgets were designed, and business plans were established, based on existing rules
  - (b) Not clear their operations can be modified at this late stage to comply with +/- 0.05 E/W, even measured at the equatorial plane
  - (c) Even if they could comply, doing so would unnecessarily shorten spacecraft useful lifetimes
- (4) *The "unless otherwise authorized by the Commission" proviso in the proposed rule does not help Inmarsat***
- (a) A number of Inmarsat spacecraft, including the three new I-4 spacecraft under construction, *are not currently authorized* by the Commission.
    - i) The failure to grandfather spacecraft without existing market access would require that Inmarsat seek case by case exceptions to this rule when it does apply for market access
    - ii) In contrast, US licensees building their spacecraft already have a "built in" exception

### **Background on the MSS Stationkeeping Problem**

- A. Many technical reasons a  $\pm 0.05$  E/W requirement is not appropriate for MSS spacecraft**
- 1. GSO MSS spacecraft are designed to orbit in an inclined "figure eight" that extends above and below the equatorial plane**
    - a) Take advantage of mobile earth terminal antenna technology**
    - b) Support larger communications payloads, conserve fuel, extend life**
    - c) Most FSS spacecraft cannot operate in inclined orbit, due to technical limitations of most FSS antennas**
  - 2. As the N/S "height" of the figure eight increases, the width increases in the E/W direction by the square of the height**
    - a) After the height exceeds  $\pm 2.7$  N/S, an MSS operator needs to significantly increase stationkeeping maneuvers to maintain a  $\pm 0.05$  E/W tolerance**
      - (1) This is needed to control other orbital dynamics that impact the E/W motion**
    - b) After the height exceeds  $\pm 3.4$  N/S, as a matter of physics, the maximum width will exceed  $\pm 0.05$  E/W**
      - (1) No amount of stationkeeping can change this**
  - 3. Current FCC and ITU  $\pm 0.10$  E/W standard adequately accounts for these MSS factors**
  - 4. Constraining MSS spacecraft to  $\pm 0.05$  E/W**
    - a) Requires significant increase in orbital maneuvers**
    - b) Estimated 5x increase in consumption of E/W stationkeeping fuel**
    - c) Limits highly inclined orbits**
    - d) May require use of existing third party patents to manage orbital eccentricity**
      - (1) Unclear whether a license can be obtained, or at what cost**
    - e) Unclear whether new plasma thrusters on I-4 will be suitable for achieving such a tolerance**
    - f) Bottom line: reduces useful lives of Inmarsat spacecraft without any countervailing public interest benefit**
      - (1) I-2 spacecraft would lose  $\sim 2.5$  years**
      - (2) Quantification of impact on I-3 and I-4 difficult to precisely estimate**

due to new propulsion systems

- B. NPRM recognizes that the +/- 0.05 rule was adopted to manage FSS interference issues, but asks whether rule should be extended to MSS to avoid collisions between GSO spacecraft**
- 1. No record support for such a concern**
  - 2. Intelsat, SES and PanAmSat suggest applying the +/- 0.05 requirement to MSS spacecraft, to address unspecified concerns about interference**
    - a) No analysis to support such regulation**
    - b) This rulemaking is not about interference, in any event**
    - c) Their proposal was first made 22 months into this rulemaking**
  - 3. Intelsat, SES and PanAmSat recognize that it is not possible for certain MSS spacecraft in-orbit or under construction to comply with such a new requirement**
    - a) They therefore support "grandfathering" spacecraft in orbit or scheduled for launch within 18 months, subject to coordination**
    - b) But such grandfathering covers only two of the three I-4 spacecraft under construction, at a total network cost of \$1.5 billion**
    - c) And requiring coordination prior to grandfathering leaves MSS companies subject to future objections from FSS operators**